

HX408W-S GaAs DC-3 GHz SPDT Switch

Description

The HX408W-S is a GaAs SPDT switch designed to operate within the frequency range of DC-3 GHz, housed in an economical SOT-363 plastic lead (Pb) free package. This device boasts low insertion loss and exceptionally low DC power consumption.

The HX408W-S is suitable for various wireless digital communication systems, including IEEE 802.11b/g WLAN and Bluetooth, serving functions such as transmit/receive selection or antenna diversity.

Features

- ★ **Low Insertion Loss:** 0.4 dB @ 2.5 GHz
- ★ **Isolation:** 25 dB @ 2.5 GHz
- ★ **Low DC Power Consumption**
- ★ **Low Cost SOT-363 Using Lead (Pb) free materials with RoHS compliant**
- ★ **Lead Free and RoHS Compliant Version of HWS314**

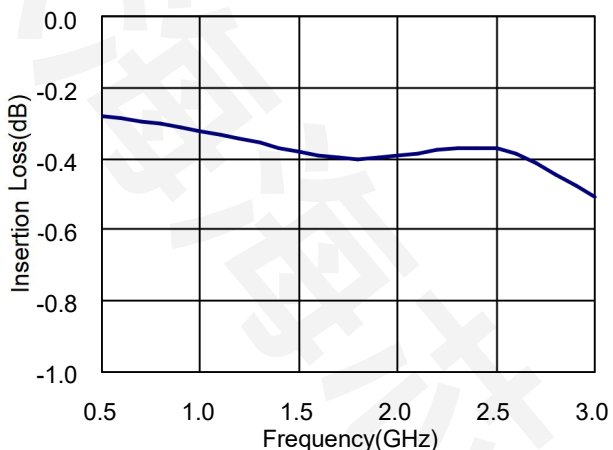
Electrical Specifications at 25°C with 0, +3V Control Voltages

Parameter	Test Conditions	Min	Typ	Max	Unit
Insertion Loss	DC-2.5 GHz 2.5-3.0 GHz		0.4 0.5	0.6 0.7	dB dB
Insertion Loss at 85°C	DC-2.5 GHz 2.5-3.0 GHz		0.6 0.7		dB dB
Insertion Loss at 105°C	DC-2.5 GHz 2.5-3.0 GHz		0.65 0.75		dB dB
Isolation	DC-2.5 GHz 2.5-3.0 GHz	21 20	25 23		dB dB
Return Loss	DC-3.0 GHz		20		dB
Input Power for One dB Compression	0.5-3.0 GHz @ 0/+3V @ 0/+5V		30 34		dBm dBm
Input Power for One dB Compression at 105°C	2.5 GHz @ 0/+3V		29		dBm
Switching Time			20		ns
Control Current			5	100	uA

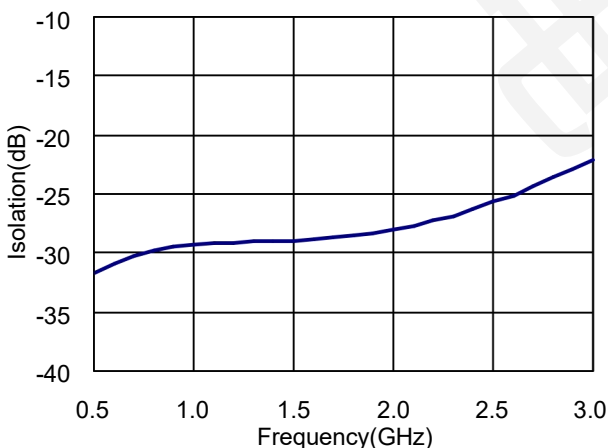
Note: All measurements made in a 50 ohm system with 0/+3V control voltages, unless otherwise specified.

Typical Performance Data @ +25°C

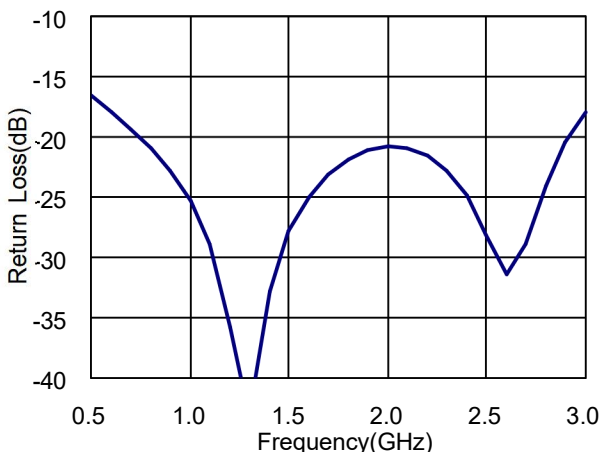
Insertion Loss vs Frequency



Isolation vs Frequency



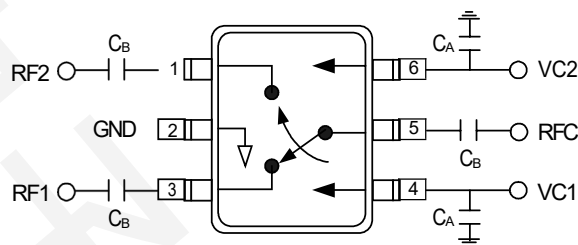
Return Loss vs Frequency



Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power 0.5-2.5 GHz	+34 dBm
Control Voltage	+6V
Operating Temperature	-40°C to +85°C
Operating Temperature (Pinmax < 31dBm@105°C)	-40°C to +105°C
Storage Temperature	-65°C to +150°C

Pin Out (Top View)



DC blocking capacitors C_B are required on all RF ports.
 $C_B = C_A = 51 \text{ pF}$ for operating frequency > 500MHz.

Logic Table for Switch On-Path

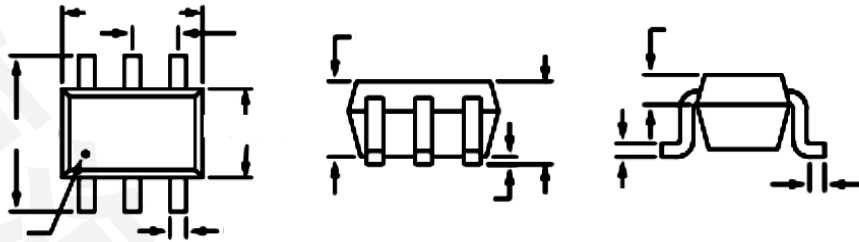
VC1	VC2	RFC-RF1	RFC-RF2
1	0	Isolation	Insertion Loss
0	1	Insertion Loss	Isolation

'1' = +2.7V to +5V

'0' = 0V to +0.2V

Package Drawing

SOT-363



Ordering Information

Part Number	Package Type	Package	quantity
HX4259-63-ST	SOT-363	Taping	3000